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PATENT & TRADEMARK OFFICE

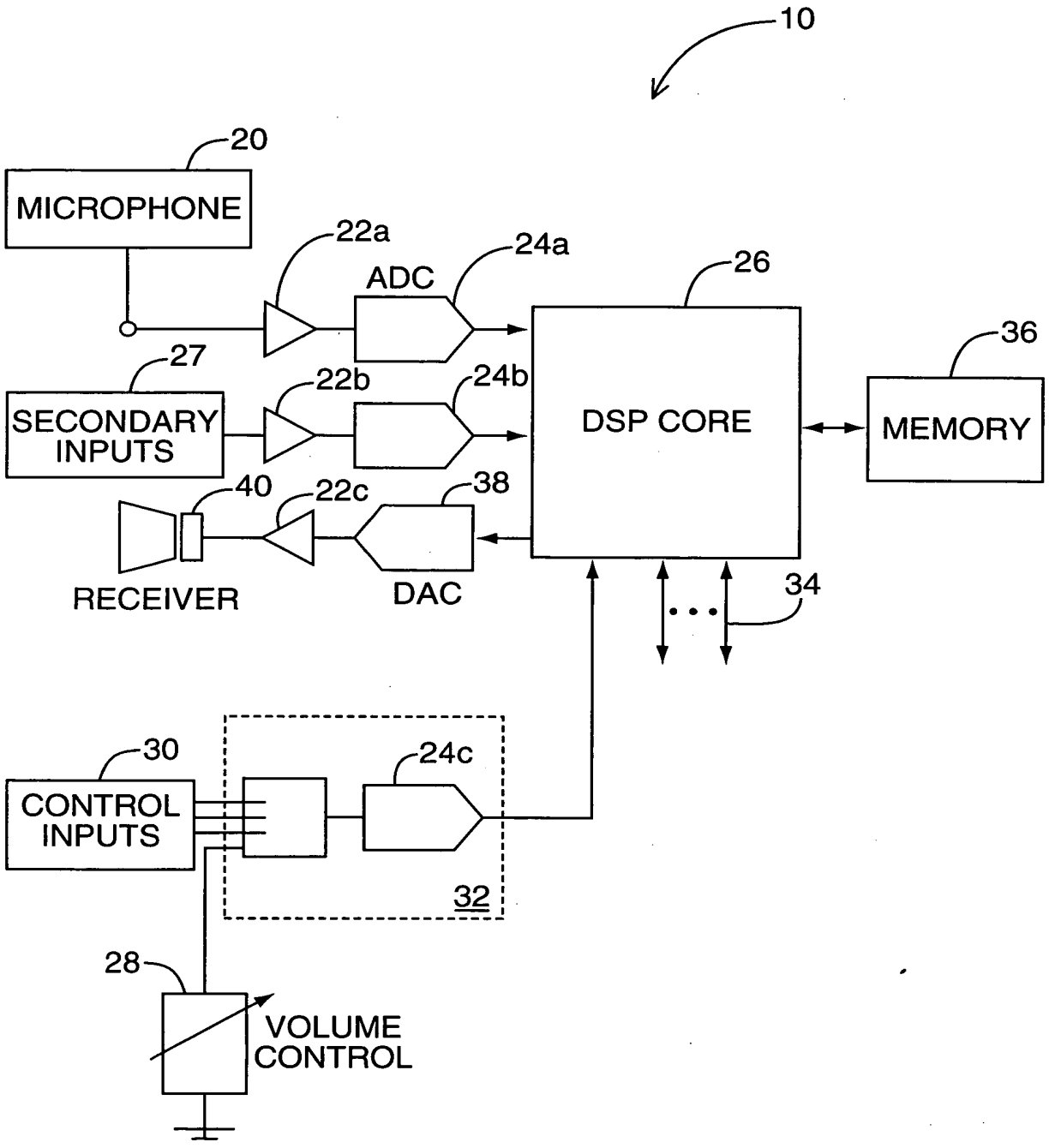

FIG. 1

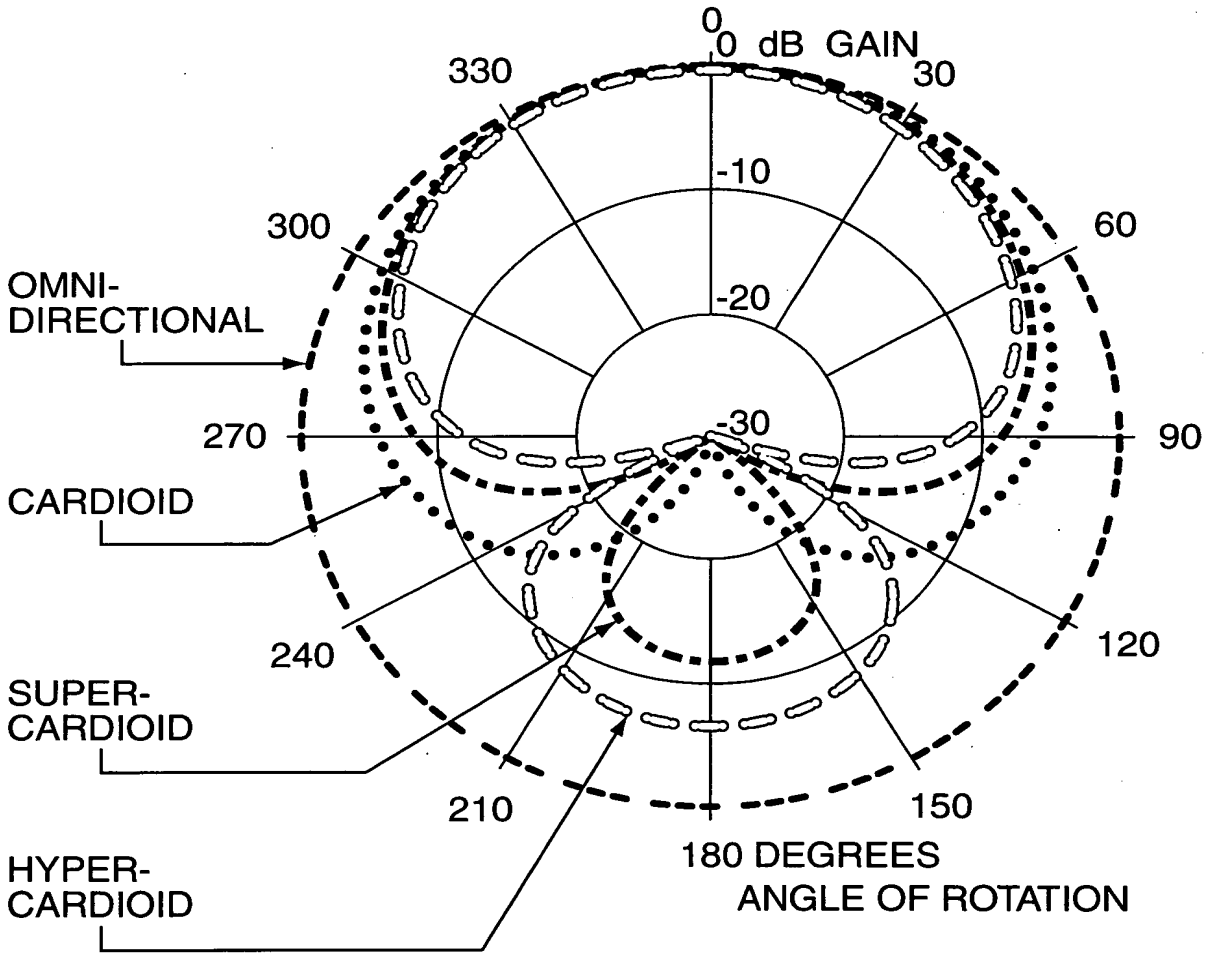
0
0 dB GAIN
30
60
90
120
150
180 DEGREES
ANGLE OF ROTATION
210
240
270
300
330
-10
-20
-30
OMNI-
DIRECTIONAL
CARDIOID
SUPER-
CARDIOID
HYPER-
CARDIOID

FIG. 2

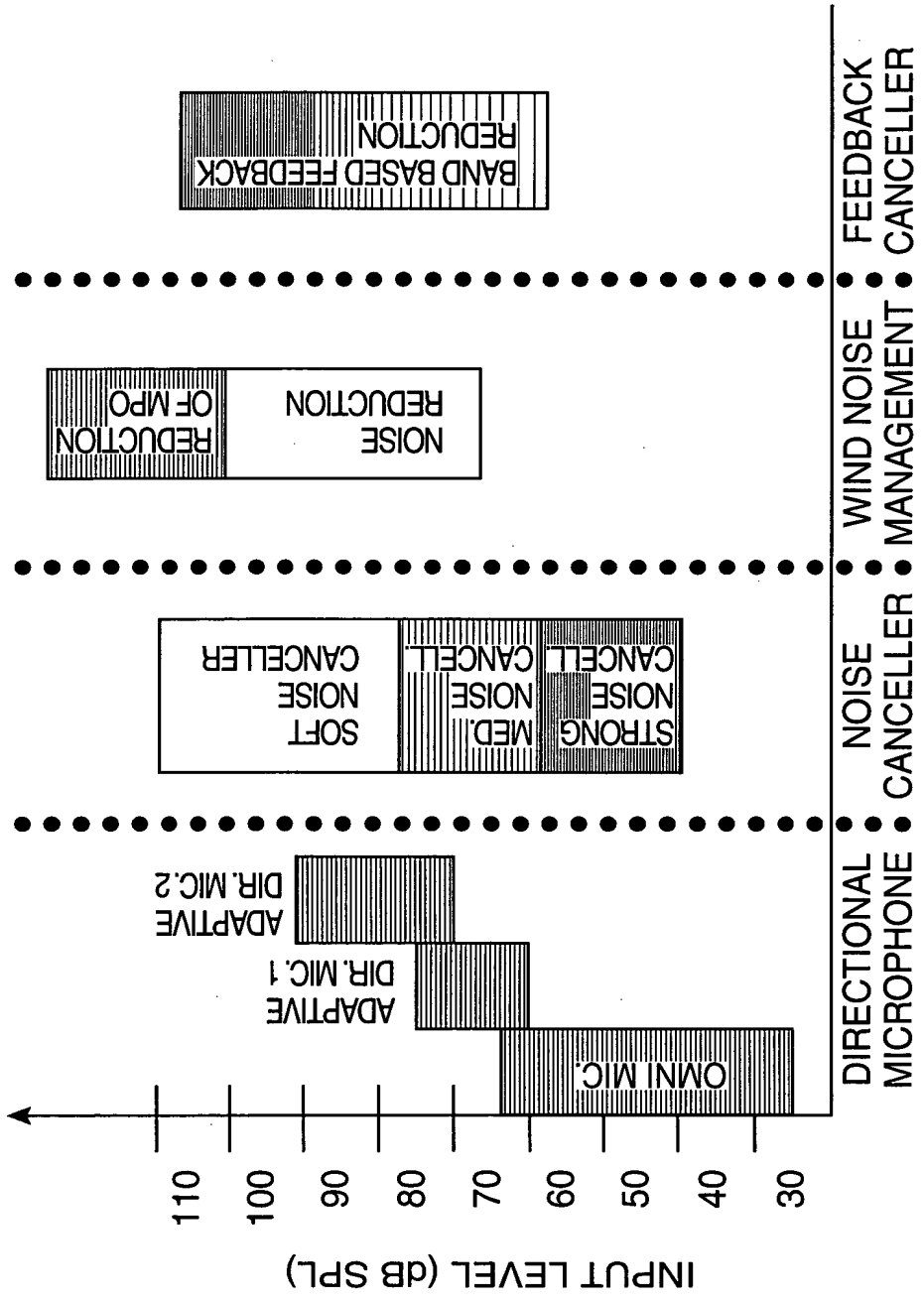
INPUT LEVEL (dB SPL)
110
100
90
80
70
60
50
40
30
DIRECTIONAL MICROPHONE
NOISE CANCELLER
WIND NOISE MANAGEMENT
FEEDBACK CANCELLER
OMNI MIC.
ADAPTIVE DIR. MIC. 1
ADAPTIVE DIR. MIC. 2
STRONG NOISE CANCELL.
MED. NOISE CANCELL.
SOFT NOISE CANCELLER
NOISE REDUCTION
REDUCTION OF MPO
BAND BASED FEEDBACK REDUCTION

FIG. 3

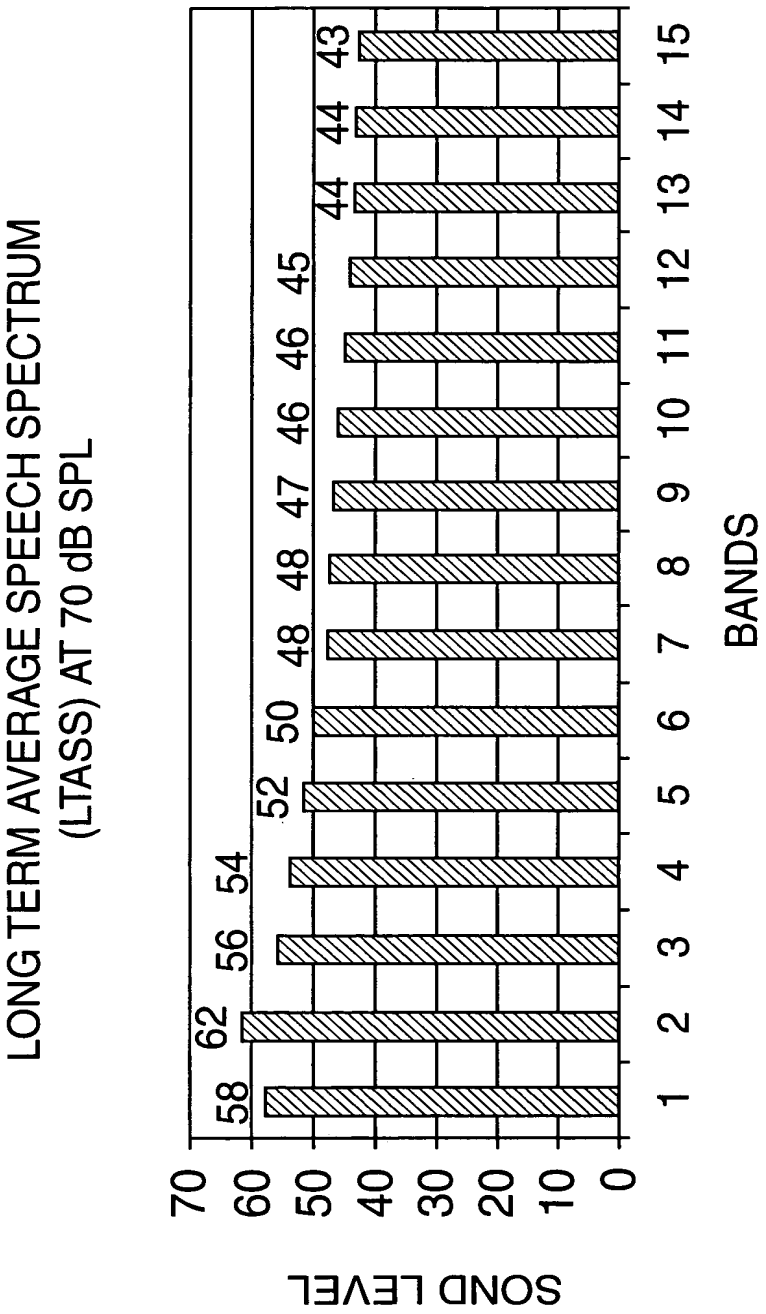
LONG TERM AVERAGE SPEECH SPECTRUM
(LTASS) AT 70 dB SPL
SOND LEVEL
70
60
50
40
30
20
10
0
58
62
56
54
52
50
48
48
47
46
46
45
44
44
43
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
BANDS

FIG. 4A

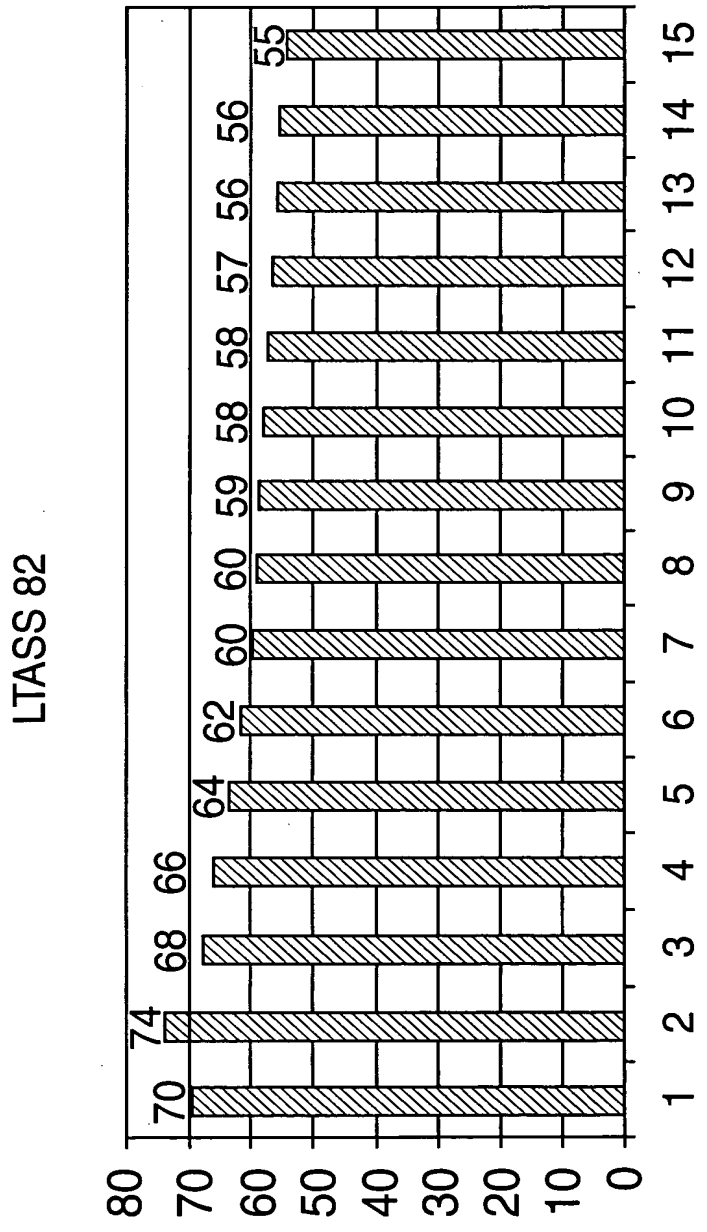
LTASS 82
80
70
60
50
40
30
20
10
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
70 74 68 66 64 62 60 60 59 58 58 57 56 56 55

FIG. 4B

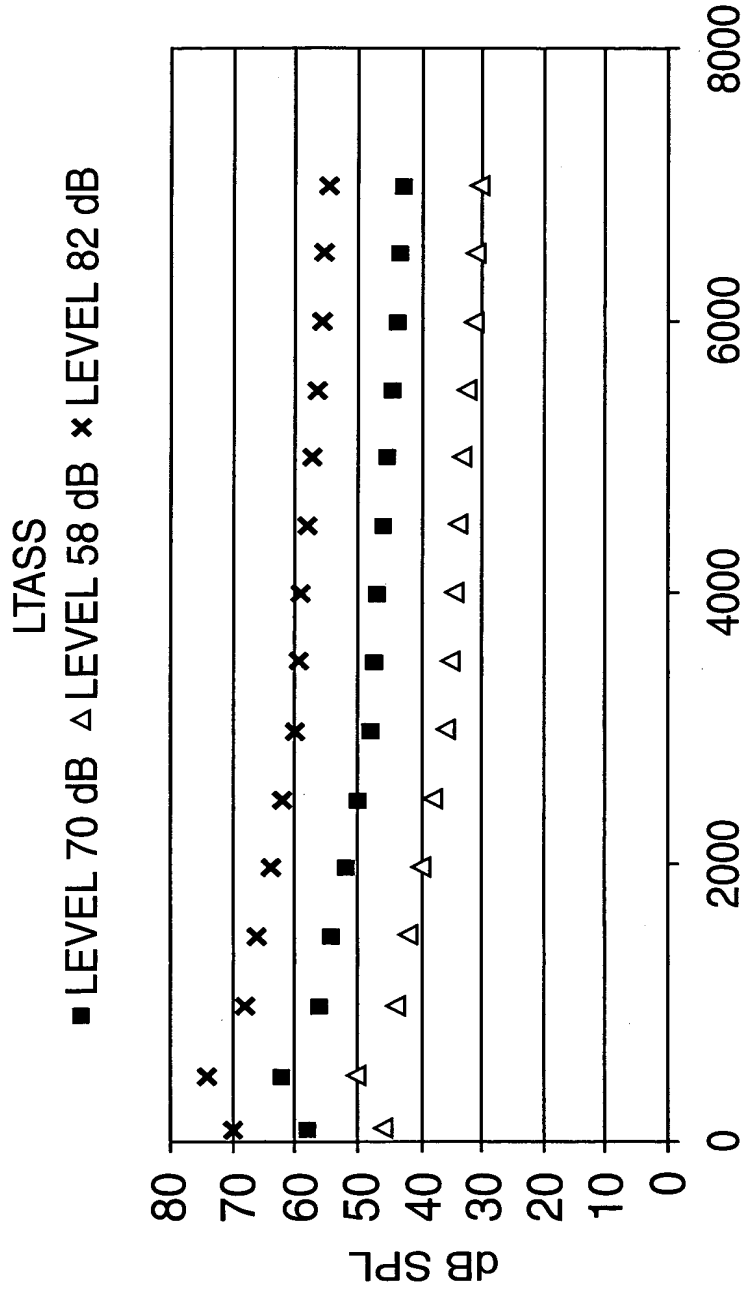
LTASS
■ LEVEL 70 dB △ LEVEL 58 dB × LEVEL 82 dB
dB SPL
80
70
60
50
40
30
20
10
0
0
2000
4000
6000
8000
FREQUENCY (kHz)

FIG. 4C

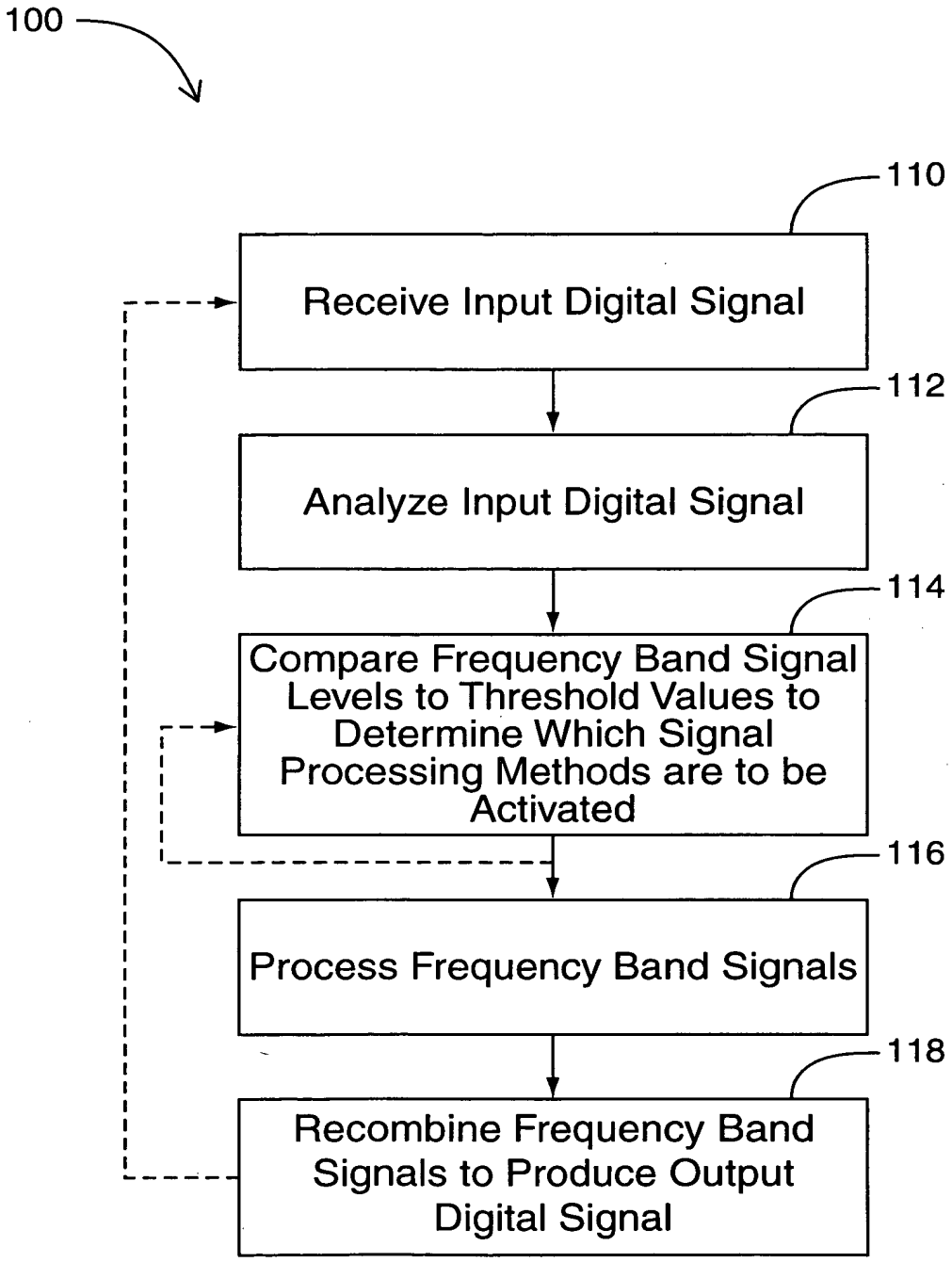
100
110
Receive Input Digital Signal
112
Analyze Input Digital Signal
114
Compare Frequency Band Signal Levels to Threshold Values to Determine Which Signal Processing Methods are to be Activated
116
Process Frequency Band Signals
118
Recombine Frequency Band Signals to Produce Output Digital Signal

FIG. 5